Implementation of the School-To-Work Opportunities Act of 1994

REPORT TO CONGRESS
September 1996

Richard W. Riley
Secretary of Education

Robert B. Reich
Secretary of Labor

SCHOOL TO WORK OPPORTUNITIES
U.S. DEPARTMENT OF EDUCATION ☆ U.S. DEPARTMENT OF LABOR

SEPT 16 1996

Honorable Albert Gore, Jr.
President of the Senate
Washington, DC 20510

Dear Mr. President:

On behalf of the Departments of Education and Labor, we are pleased to submit this report on activities carried out under the School-to-Work Opportunities Act. Our Departments have joint responsibility for administering this landmark legislation. This report shows how we are implementing the Act to meet its far-reaching goals. These include creating a universal, high quality school-to-work transition system and increasing opportunities for all students to prepare for further education and high-skill, high-wage careers.

Overall, our assessment is that the school-to-work effort shows promising signs of achieving the Congress' objectives. Participation by States and localities, and the involvement of students, teachers, parents, employers, workers, and other stakeholders in school-to-work activities, have been encouraging in all States and in many localities.

It is our earnest hope that the Congress will continue to provide leadership and support for the aims of this legislation. The materials compiled for this report summarize the status of the School-to-Work Opportunities Act, and can be a resource for all Americans concerned about the quality of education, and the caliber and competitiveness of the American workforce.

Sincerely,

Richard W. Riley
Secretary of Education

Robert B. Reich
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SCHOOL TO WORK OPPORTUNITIES
U.S. DEPARTMENT OF EDUCATION ☆ U.S. DEPARTMENT OF LABOR

SEPT 16 1996

Honorable Newt Gingrich
Speaker of the House of Representatives
Washington, DC 20515

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Executive Summary

School-to-work is a success story in progress.

This Report to Congress describes the progress that States and locally based public-private partnerships have made in building school-to-work systems. It also surveys early research on how school-to-work has benefited students, schools, employers, and communities. Finally, it summarizes key practical and philosophical elements that practitioners have identified to help expand and improve school-to-work.

School-to-work links education reform with workforce development and economic development, by engaging many stakeholders in designing and implementing a comprehensive, integrated system of education and workforce preparation that reflects local needs. It opens a variety of post-high school opportunities by integrating academic and occupational curriculum, school-based and work-based learning, and secondary and post-secondary education. School-to-work is also closely linked with the Goals 2000: Educate America Act, which provides a framework for State efforts to improve student academic achievement and establishes the National Skill Standards Board that is helping develop a system of voluntary occupational skill standards.

School-to-work expands young people's choices in life by preparing them for high-skill careers, and further training or education, confident that they have the skills to succeed. Students have opportunities to learn academic subjects by seeing knowledge applied in the real world, and learn job-specific skills with stronger academic grounding. School-to-work also motivates them to continue learning because they see first hand how many good careers require post-secondary education or training.

Unlike most earlier education and employment and training initiatives, the School-to-Work Opportunities Act did <u>not</u> establish another program with Federal mandates to address the needs of a particular target population, nor did it require the adoption of certain strategies to build on existing education and training programs. Instead, it offers a flexible framework for States and communities to design education systems for all students. It is also distinctive in not mandating a lead agency or type of grant recipient; under school-to-work, support goes to States for distribution to local partnerships among businesses, labor, schools, and others with a stake in the system, such as parents, local elected and appointed officials, community-based organizations, proprietary institutions, higher education, and private industry councils. Furthermore, school-to-work grants are one-time, five-year competitive grants to States, and the initiative sunsets in the year 2001.

Eight States received school-to-work implementation grants in 1994, and 19 additional States were awarded grants in 1995. Funding -- channeled through the Departments of Labor and Education -- for States and communities has been $100 million in FY 1994; $245 million in FY95, and $350 million in FY96

Initial Findings

The benefits of school-to-work -- for students, employers, schools, and the nation -- will take many years to assess fully, as teen-agers progress from high school into the workforce, through varying degrees of intervening education and training. The value of learning what it is -- and what it takes -- to be a nurse, a machinist, or a software developer in a systematic fashion as a teen-ager rather than haphazardly as a 25- or 30-year-old is something that only will be realized years later, embedded in data on national and corporate output as well as individuals' living standards and sense of career fulfillment. School-to-work also appears to build young people's demand for further education by showing them how good careers require post-secondary training. In addition, research suggests that connecting the workplace and in-school learning benefits employers and students by strengthening student motivation, improving academic and skills standards, increasing labor market awareness, and enhancing productivity.

Early efforts to measure the scope and effects of school-to-work initiatives have found that:

- For the 11 States with complete data on schools, 210 partnerships reported that about a half million students, representing 1,800 schools, are engaged in school-to-work systems that offer curriculum that integrates academic and vocational learning, provides work-based learning experiences connected to classroom activities, and enhances linkages between secondary and post-secondary education;

- These partnerships also reported participation by 135,000 businesses. These employers provided more than 39,000 work-based learning sites and nearly 53,000 slots for students;

- In the second year after the Act became law, data from 17 States showed that $1 in other public and private funds was spent on school-to-work for every $2 in Federal investment -- in addition to in-kind support and redirected resources;

- Organizationally, States are divided between those that have created special entities with primary policy-making responsibility for school-to-work, and those in which the board, council, or commission responsible for school-to-work also oversees other general workforce or human resource development policies. System leaders are appointed by State Education agencies in 11 of the 27 States, with the others chosen by the Governor or an interagency commission;

- Federal funds have gone to 818 local partnerships, through State implementation grants or directly from the Federal government. Financial responsibility for local partnership grants is being assumed at the local level by entities ranging from school districts and community colleges to private industry councils. Several States have not yet awarded funds locally, and several others intend to make additional awards; and

- States are using their Federal investment to create a school-to-work infrastructure, and, later, to support sub-state partnerships, technical assistance, curriculum development, and other activities.

- State school-to-work directors say that their biggest challenges include poor understanding of key school-to-work principles among some stakeholder groups, and difficulty creating and sustaining collaboration among various public and private entities. Nonetheless, they also report that striking progress has been made in building State-level interagency collaboration, forming local partnerships, and getting employers involved in local partnerships.

States are at different stages in their system-building, and these findings are based on States that were able to submit complete data for the first survey in 1996. Consequently, progress on students and employers was reported and analyzed from 10 States, progress on schools from 11 States, and progress on raising non-Federal resources from 17 States. Because these data reflect only a subset of the States and local partnerships awarded implementation funds, current participation in school-to-work is much greater than what we are reporting.

Ongoing research on school-to-work includes: a set of annual progress/performance measures, developed to assess participation by employers, schools and students, and results for students; a national evaluation, with a first report due in September 1998, and other short-term and long-term research.

Key School-to-Work System Elements

States and the National School-to-Work Office have identified eight core elements that are key to school-to-work systems. These define school-to-work as a system-building initiative that opens doors and broadens horizons for all students, rather than a patchwork of educational reforms or training programs:

- School-to-work opportunities are intended for all students;

- School-to-work components exist throughout the school curriculum;

- Staff development investments and capacity-building approaches include all levels of professional staff associated with school-to-work systems;

- School-to-work systems allow students to explore "all aspects of an industry";

- Employers and labor unions play a key role in building a school-to-work system;

- Learning is organized around career majors, which provide a context for learning tied

to students' interests and allow for connections between secondary and post-secondary schools and work-based learning;

- States have identified a "roll-out" strategy, and utilize an appropriate sub-state structure to manage system expansion, and

- All partners are responsible for ensuring that their systems yield results that are measurable and drive continuous improvement efforts.

Conclusion

School-to-work is on the road to success, and gaining momentum, but it will not succeed overnight. Although systems continue to become stronger, they are still in their early development. The experience thus far indicates that more must be done to involve employers and all students, define career majors, and build bridges to further training and post-secondary education. More students, parents, employers, and their communities still need to see that genuine learning is occurring in school-to-work systems and that school-to-work brings real world relevance to the K-12 school years. Employers need to take an active voice in demanding school-to-work systems, and the connections and collaboration between the worlds of school and work need to be improved and expanded.

Building school-to-work systems and realizing the many benefits for students, employers, and society will take time, but the evidence on early implementation of systems is encouraging. Its principles and goals resonate with employers, parents, students and educators, and are beginning to take hold. Stakeholders are coming together to form viable and vital partnerships.

States have made significant progress in creating their vision of a school-to-work system, as well as dynamic leadership and organizational structures to manage the systems. Local partnerships, which are the cornerstone of school-to-work system-building, are growing. Early research shows that employers are providing work-based learning opportunities; schools are offering curriculum that integrates academic and occupational learning, and students are attracted to the school-to-work experience. Nearly all States have exemplary or promising models within their developing systems that serve as catalysts and models.

Now, it is necessary to sustain the momentum and keep on the course begun during the past two years. The power to move ahead will be generated as the full school-to-work system is built. It will run on the energy supplied by States and localities, and grow as ever more parents, teachers, employers, unions, and workers see the benefits of school-to-work. Above all, the success of school-to-work depends on strong support from all partners and the students who participate in it. It is their future that continually is being refashioned, and they are the ones who must acquire the knowledge and competencies to meet those changes. They have the most to gain. Ultimately, their future -- and the future of our country -- is at stake.

Background on the School-to-Work Opportunities Act

In the 1970s and early 1980s, the United States came to the sobering realization that the nation's future economic success in a highly competitive, global marketplace is directly dependent on the education of our workforce, and that dramatic shifts in technology, modes of production, and even in the nature of work itself require Americans to develop new knowledge and skills, and to prepare for a new world of work.

Today's economy is fundamentally different from what Americans knew between the late 1940s and the 1970s. Today's employers and employees, from multinational companies to small businesses, are all participants and competitors in a single, global economy. A constantly changing knowledge base -- driven by information technologies and the revolution in telecommunications -- is profoundly affecting American life and work, and our education system is only beginning to catch up. Management structures also have changed dramatically, in that they draw extensively on front-line workers' expertise and problem-solving skills, and must respond to ever new technological innovations. In addition, the knowledge and skills required to realize the full productive potential of today's technologies are not merely extensions of those from the past; often, they are without precedent and have to be learned "on-the-fly."

More than ever before, our economy and society require a higher level of, and more diverse, skills. This places enormous pressure on the nation's young people. Our current secondary education system -- both college preparatory and vocational -- is ill-suited to the new economy. Employers say that too many youth don't have the basic reading, writing or analytic skills for entry-level jobs, and that schools are not adequately preparing students to meet the changed workplace demands that are critical to American competitiveness. Even though more than four out of five teen-agers complete high school today, compared with one in two after World War II, it is not only how many finish that counts, but how much they know and what they can do with it. Thus, the fundamental question is: How do we equip young people with the right kinds of knowledge, skills, and workplace competencies to make the transition from school to work, when work is becoming dramatically different from what we have known for generations?

For one, the old divide between head skills and hand skills is increasingly meaningless. All Americans, and certainly all young people, need to know how to learn and experiment, solve problems and collaborate, discover patterns and meanings, understand causes and consequences, and be adept at adapting. We can no longer have a few tracks heading to just a few destinations. We need many runways headed everywhere.

America must have high-level academic and technical training: College preparatory students cannot just learn abstract academic subjects. They need to see knowledge as it is applied in the real world. Vocational students must supplement job-specific skills with academic skills.

Our high schools must prepare our youth for the three C's: college, careers and citizenship.

The schoolhouse can't be insulated from the outside world or the future. Each and every school must be a diversified learning laboratory -- a marketplace of ideas and skills -- where students can acquire broad knowledge and specific capabilities, and an understanding of the world of work.
Such learning opens a variety of post-high school opportunities by integrating academic and occupational curriculum, school-based and work-based learning, and secondary and post-secondary education.

The problems and challenges are systemwide, and require comprehensive, integrated strategies, tailored to enable employers, teachers, parents, union leaders and workers, and decision makers at all levels to prepare young people to successfully bridge the school-to-work gap.

The School-to-Work Opportunities Act of 1994 provides a national framework for building local systems to ensure that *all* students can achieve high levels of academic and technical skills, and prepare for further education and careers. A basic premise underlying the Act is that every student -- including the college-bound -- can benefit from learning about careers as well as being better prepared to pursue careers through learning by doing and applying abstract concepts to real-life situations. Students must have opportunities to discover what careers fit their interests and aptitudes. It is of little use to be shown the menu without being allowed to taste the entrees. This kind of learning can reduce the drifting and churning through low-wage jobs so common among young Americans. However, as the Act stipulates and this report illustrates, there is no single route.

The Act was the culmination of 15 years of research and experimentation with how students learn, and how classroom teaching can be linked to the workplace. In 2001, the law "sunsets," with the expectation that locally designed school-to-work systems will be well on their way to becoming the norm in every State.

To date, a modest investment has been made to realize the goals of the Act. In the 1994 fiscal year, $100 million was appropriated from the Job Training Partnership Act and the Carl D. Perkins Vocational and Applied Technology Education Act to lay the groundwork for STW. After passage of the Act, $245 million was appropriated in FY95, and $350 million was appropriated in FY96.

The Act is closely linked with the Goals 2000: Educate America Act, which provides a framework for State efforts to improve student academic achievement. School-to-Work (STW)[1] complements State academic-reform efforts by ensuring that both academic and occupational instruction are held to high standards. Goals 2000 also establishes the National Skill Standards Board (NSSB) that is responsible for facilitating the development and implementation of a nationwide system of voluntary occupational skill standards. STW

[1] *For the sake of brevity, but at the risk of sounding like the traditional government alphabet soup, School-to-Work will be abbreviated as STW throughout this report.*

systems are encouraged to use standards at least as challenging as those endorsed by the NSSB.

STW links *education reform* with *workforce development* and *economic development*, by engaging a broad range of stakeholders in designing and implementing a comprehensive, integrated system of education and workforce preparation that reflects local labor market needs. Welding together these links is essential so that all Americans can be employed and employable at good jobs in the 21st-century economy. In short, it's not education that's costly. It's the lack of it.

The Purpose of the Report

This report to Congress is required by the School-to-Work Opportunities Act (Section 405 of Public Law 103-329), which the President signed into law in May 1994. It includes information: 1) concerning the programs receiving assistance under this Act; 2) drawn from reports from State and local partnerships, and 3) evaluations requested by the Secretaries. It covers the two years since the law was enacted. Subsequent reports will be submitted annually.

The Scope of the Report

This report, which has four parts, is based on information from evaluation studies, quarterly progress reports and site visits to STW grantees. Because the Act is only two years old and the first STW systems are still brand new, we are still in the very early stages of implementation and data collection. The report covers the Federal role and State and local efforts.

- Part I describes the vision of the STW Opportunities Act and its features.
- Part II provides an overview of implementation strategies.
- Part III reviews the progress to date in implementing STW systems.
- Part IV discusses what lessons have emerged from early experience as basic elements of system-building that are critical for the success of STW.

Voices from the Field: Early Impressions of School-to-Work

As the following comments illustrate, STW is already affecting the lives of many young Americans, their families, and teachers, as well as employers.

Students

This is my fourth year in Craftsmanship 2000. I'm in college right now and I have a future ahead of me because of this program. My grades improved drastically since high school.

-- Ben Borens, student/machining apprentice at Hilti, Inc.; Craftsmanship 2000, Tulsa, Oklahoma

STW really helped me to get focused, going to the hospital and actually seeing different jobs, what the requirements were, the responsibilities, what type of training was required, what type of school. The ProTech project has definitely been a very big resource in my life. This isn't a program intended to just get by; you really have to understand what you're doing. So many people graduating don't know what they want to be. I felt pretty happy that on Graduation Day I knew what I wanted to be, and I was able to reach that goal.

-- Michelle Boyd, student in radiation therapy at the Massachusetts College of Pharmacy, Boston, Massachusetts

Parents

STW gives kids a better outlook about why they have to learn multiplication tables and other subjects. It's important for parents to know that it applies to college-bound kids and kids who work right after high school. My son has realistic expectations about the future.

-- Carole Bailey, mother of Justin, student in the Milwaukee Public School STW initiative

Employers and Employees

I see a large role for employers in STW programs. We need to be an integral part of a system that keeps curricula in tune with the workplace, and eases the movement of young people from school to jobs. Employers and educators have to work together to create the kind of educated workforce that can carry the nation into the information age.

-- John L. Clendenin, chairman, BellSouth

The most important thing is that the students understand there's a reason behind what they're doing, and that creates some excitement in them. They much more willingly apply what they learn in school at work, and understand how that is used and how important it is for their future.

-- Karl Gaertner, Vice President, Hilti, Inc.

When you're learning how to make something work, students pay attention, because it's their own problems they're learning to solve. Mentors can ask students what they think and how they'd approach the problem. This creates workers who are thinkers and doers, people who can drive your company and make it more profitable.

-- Tom Panzarella, co-owner, Cook Specialty Company, Montgomery, Pennsylvania

Educators

STW will provide us with more serious, more mature students when they enter as freshmen.

-- Charles B. Knapp, President, University of Georgia

The students get a chance to integrate. There's a real synergy of the information they're getting in the classroom and the hands-on, practical skills they need in the hospital. They can see the value of their classroom requirements immediately, because they can carry it right over to the hospital setting.

-- Annette Coleman, instructor, Massachusetts College of Pharmacy, Boston, Massachusetts

School-to-work is a philosophy to restructure education. All students are included in school-to-work, so we can better meet the needs not just of those who want to go on to post-secondary education but any student -- so that when they exit the doors of high school they can be prepared to do whatever they choose to do. Whenever you have high expectations for students, they reach for the stars and sometimes they can even grab them and really do great things.

-- Julie Stewart, STW coordinator, McKeesport High School, McKeesport, Pennsylvania

PART I: THE SCHOOL-TO-WORK FRAMEWORK

The goals of the School-to-Work Opportunities (STWO) Act are ambitious. They include:

- establishing the framework within which all States can create STW systems that are part of comprehensive education reform;
- helping students achieve high-level academic and occupational skills;
- widening opportunities for all students to participate in post-secondary education and advanced training, and move into high-wage, high-skill careers;
- providing enriched learning experiences for low-achieving youth, school dropouts, and youth with disabilities; and assisting them in obtaining good jobs and pursuing post-secondary education;
- increasing opportunities for minorities, women, and people with disabilities, by enabling them to prepare for careers from which they traditionally have been excluded, and
- utilizing workplaces as active learning environments in the educational process.

The major features of STW are:

System Building: Under the STWO Act, States and communities are developing sustainable systems by building on and coordinating existing efforts in education reform, workforce development, and economic development. The Act provides direction for integrated approaches to help all youth prepare for employment, drawing on schools, communities, and workplaces. Educators, employers, workers, government, community-based organizations, parents, and students are part of an integral whole, and each has a role to play.

What Makes the Legislation Distinctive

Unlike most earlier education or employment and training initiatives, the STWO Act does not establish a new program to address the needs of a particular target population or require a certain strategy. Instead, it offers a flexible framework for States and communities to design education systems for all students that respond to local institutions and needs. The Act does not mandate a lead agency, administrative entity, or type of grant recipient. It stipulates that partnerships to guide STW efforts must be inclusive. It provides one-time, five-year grants to States on a competitive basis, and sunsets in the year 2001.

All Students*:* The Act clearly intends all students to have an opportunity to participate in STW. It emphasizes that this means young people from a broad range of backgrounds and circumstances, including students from diverse racial, ethnic or cultural backgrounds; disadvantaged students; students

with disabilities; students who have dropped out of school; students with limited-English proficiency; migrant children, and academically talented students. STW continues to provide preparation for college and careers, moving away from the distinction between "college-bound" and "non-college-bound" students. It deliberately abandons the philosophy of "tracking" students into college preparatory or vocational education programs. A basic premise of the law is that all students need both an academic base and workplace skills to prepare for productive careers.

Core Components of STW: STW systems restructure education so that all students can meet high academic and occupational standards. Students learn how academic subjects relate to work. After high school, they can choose to enter the workplace, college, or further training, confident that they have the skills to succeed. The law defines core elements within a national framework, while giving States and localities flexibility to design systems that meet local needs and resources. These core elements are: school-based learning, work-based learning, and connecting activities.

School-based learning is instruction and curriculum that integrate academic and vocational learning. The program of study must enable all students to meet high academic standards to prepare for post-secondary education and careers. School-based learning incorporates career awareness, career exploration and counseling programs; the opportunity to select a career major by the 11th grade, and regularly scheduled student evaluations.

Work-based learning means that workplaces become active learning environments by engaging employers as partners with educators in providing opportunities for all students to participate in high-quality work experiences. It gives students the chance to apply abstract concepts and principles while learning vital workplace skills in a hands-on, "real-life" setting. Working in teams, solving problems, and meeting employers' expectations are workplace skills that students learn best in practice under the supervision of adult mentors. Work-based learning includes job training and work experiences that coordinate with classroom learning, workplace mentoring and instruction in general workplace competencies as well as -- to the extent possible -- all aspects of an industry. Work-based learning is built around career majors that students choose, and leads to the award

A career major is a coherent sequence of courses or field of study that prepares a student for a first job. It integrates academic and occupational learning, as well as school-based and work-based learning, and establishes linkages between secondary and post-secondary institutions. It prepares a student for employment in a broad occupational cluster or industry; typically includes at least two years of secondary and one or two years of post-secondary education; provides experience and understanding of all aspects of an industry; results in a high school diploma, a certificate recognizing completion of one or two years of post-secondary education, and a skill certificate; and may lead to further education and training. A **skill certificate** is a portable, industry-recognized credential that certifies the holder has demonstrated competency on a core set of content and performance standards related to an occupational cluster area. It serves as a sign of skill mastery at industry-benchmarked levels, and may assist students in finding work in their community, State, or elsewhere in the nation.

of a skill certificate.

Connecting activities are the "glue" to hold local STW efforts together. Linking schools and workplaces does not happen naturally. It requires a range of activities to integrate school and work to ensure that the student is not the only thread that ties the two. Connecting activities match students with employers, secure school site mentors as liaisons with employers, provide technical assistance to employers and schools, link participants with community services, collect and analyze information regarding post-program outcomes for participants, and connect youth-development strategies with employer and industry strategies for upgrading workers' skills.

Partnerships: The Act calls for broad-based public/private partnerships among businesses, schools, and other stakeholders at the State and local levels to collaborate in STW system-building. These reflect the law's intent that school and work be linked to improve education.

The Act also encourages new levels of collaboration within States to align their initiatives and maximize funding in support of education reform and employment goals. Necessary members of an intra-State partnership include: the Governor; representatives of the State educational agency; other State officials responsible for economic development, employment, job training, post-secondary education, human resources, vocational education, and vocational rehabilitation, and the private sector.

At the local level, the law requires that employers, educators, union representatives, and students be included in all STW partnerships. It also encourages participation by other groups with a stake in the system, such as parents, local elected and appointed officials, community-based organizations, proprietary institutions, higher education, and private industry councils. Such partnerships foster the broad-based community support necessary to establish STW systems as an integrated approach to help all students better prepare for further education and employment.

Flexibility*:* The STWO Act clearly signals the Congress' intent that States and localities have broad discretion in establishing and implementing their STW systems. States and localities design systems that reflect their own economies and respond to their own labor market needs, strategies for education reform, and resources. They have the flexibility to choose their own service-delivery mechanisms and establish their own governance structures. They also may seek waivers from existing Federal education and job-training programs to implement a statewide STW system tailored to its particular circumstances.

PART II: IMPLEMENTING THE ACT -- BUILDING SCHOOL-TO-WORK OPPORTUNITIES SYSTEMS

The STWO Act poses a distinctive and ambitious challenge to States, communities, and the Federal government to do business differently by focusing on system-building, opportunities for all students, and inclusive partnerships. The Act's sunset provision and its emphasis on long-term planning, coordinated resources, and self-sustaining systems, set it apart from traditional Federal programmatic, categorical models. The Federal investment for STW is intended to support the development and early implementation of State and locally designed systems that integrate State, local, and other Federal funds, rather than the creation of programs dependent on separate funding streams. Federal funds provide incentives for innovations driven by local needs, and foster coordinated efforts to share information, measure progress, and further STW nationwide.

Collaborative Leadership of School-to-Work at the State, Local and Federal Levels

The innovative and flexible State and local partnerships are mirrored by a new form of administrative partnership between two Federal agencies.

State and Local Strategies and Activities

State Leadership: States are responsible for producing comprehensive change in the ways that youth are educated and prepared for work and further education. State leadership is critical for designing a statewide STW system, ensuring the progress of implementation, and determining how closely STW system development is integrated with educational reform, and economic and workforce development. In addition to aligning STW with other statewide priorities, this responsibility includes establishing State strategies for STW implementation; determining how funds will be distributed at the sub-state level; ensuring coordination with existing local education and training programs and resources; obtaining the active involvement of employers and other stakeholders, and ensuring that all students are served by STW systems.

State strategies have been developed in very different contexts and ways. Some grew out of education reform initiatives. Others evolved from workforce development efforts. And still other strategies emerged within the context of economic development. STW is a vehicle for uniting and accelerating all three types of initiatives. While the Act requires that certain key entities be active members of the State partnership, States have flexibility in determining how its partnership will be configured and how it will launch its STW system. This is illustrated by several examples:

Workforce development

In **Indiana**, STW efforts are spearheaded by the Department of Workforce Development, which is responsible for programs and resources from vocational and technical education, workforce literacy,

unemployment insurance, the Job Service, the Job Training Partnership Act (JTPA), labor market and career information, and several post-secondary initiatives. The Department is also responsible for the State's One-Stop Career Centers and STW. Other entities on the State's STW Management Team include the Department of Education, the Family and Social Services Administration, the Department of Commerce, the Professional Standards Board, the AFL-CIO and the Commission for Higher Education. Regionally, 15 State-mandated Workforce Partnership Areas -- of school corporations, two- and four-year public post-secondary institutions, vocational schools and workforce development offices -- do strategic planning, capacity building and implementation.

In **North Carolina**, the Governor's Commission on Workforce Preparedness administers the State's STW initiative, "JobReady," and its One-Stop Career Centers initiative. The State JobReady Partnership Council, which includes 51 percent business representation, provides leadership and oversight to implementation of the JobReady initiative. The Council operates under the auspices of the Governor's Commission, and 16 of its 27 members also serve on the Commission. Representatives of the Departments of Public Instruction, Labor, and Commerce (the JTPA administrative entity) and the community college system form the core Implementation Team. At the local level, the Governor reconstituted the State's 25 private industry councils into Workforce Development Boards. The State also has more than 100 school districts and a strong system of community colleges. When forming local STW partnerships, communities are encouraged to align with the State's Tech Prep consortia, which are linked to community colleges.

In **Colorado**, the Governor has established a Workforce Coordinating Council with responsibility for policy development and oversight. A STW office under the Lieutenant Governor is the grant's fiscal agent, and is responsible for overall system leadership and management. State leadership organized an Interagency Coordinating Team -- staffed by the Departments of Education, Labor and Employment; the Community College and Occupational Education system; the Governor's Job Training Office, and the Commission of Higher Education -- responsible for aligning programs, promoting reform efforts, and providing technical assistance.

Education reform

The **Utah** State School-to-Careers (STC) Committee is composed of 23 voting members. The initiative is led by the State Office of Applied Technology Education, which contributes most daily operations staff. An STC Standards Committee and six subcommittees are responsible for providing technical assistance to regional and local partnerships in Secondary/Post-secondary Linkages, Career Majors, Collaboration, Comprehensive Guidance, Curriculum Integration, and Work-Based Learning. In addition, the Utah State Office of Education is moving to reorganize around career fields. Teams of academic and applied technology educators at the State level are being organized around: Technical, Scientific, Artistic, Social-Humanitarian, Business/Marketing Management, and Business Information.

In **New York**, the team responsible for implementing the State system is based in the Department of Education's Office of Workforce Preparation and Continuing Education. This team manages the funding to local partnerships, coordinates the rating of proposals, and provides technical assistance to partnerships. It also works closely with the statewide advisory council, which includes representation from the Governor's office, the State Legislature, and all required constituencies. This Council makes recommendations to the Governor and Commissioner of Education regarding policy implementation for STW. New York is uniting STW with other education reform components through an integrated plan for STW, Goals 2000 and the Elementary and Secondary Education Act, which incorporates plans for

curriculum integration, staff development and evaluation. At the sub-state level, rather than using existing structures or entities, New York opted to allow local partnerships to define their own geographic boundaries and membership. This strategy builds on the State's array of existing networks and services and allows localities maximum flexibility in determining how to provide STW activities most effectively. Local partnerships must include all those entities required by the Act, as well as parents and private industry councils or service delivery areas.

Economic development

The STW initiative in **Ohio** is led by the Governor's Human Resource Investment Council (GHRIC). Within the Council, five entities, including the Chancellor of the Ohio Board of Regents, the Administrator of the Ohio Bureau of Employment Services, the Superintendent of Public Instruction of the Ohio Department of Education, and the Directors of the Ohio Departments of Development and Human Services have defined their roles and responsibilities in developing and implementing Ohio's STW system. The State's expansion plan is organized around its 12 economic development regions.

A combination of all three

***Florida**'s STW plan developed from the existing Tech prep consortium, that is designed to prepares students for technical careers and post-secondary education. The system comprises 28 regions, covering all 67 school districts. In the fall of 1995, the State established the School-to-Work Joint Services Office to coordinate all interagency activities related to STW system-building. It includes a director, six education staff, two staff members from the Department of Labor, and two staff from the Governor's office. A statewide STW leadership team translates policy from Florida's economic development initiative, education reform efforts, and workforce development initiatives into a strategic work plan. The Governor has revised the existing Jobs in Education Partnership to serve as the Human Resource Investment Council. This board provides oversight for all four Florida workforce development strategies: STW, One-Stop Centers, Welfare to Work, and High Skill, High Wage Jobs. The board is comprised of 51 business and industry representation, the Commissioner of Education, and the Secretary of Labor.*

State Legislation Supporting School-to-Work

Some State legislatures have adopted legislation that supports STW system-building. In a few cases, this legislation predated the Act. These legislative efforts represent some of the many *diverse approaches to State policy execution, as the following examples highlight. Oregon enacted the Education for the 21st Century Act in 1991, based largely on the recommendations of America's Choice: High Skills or Low Wages, to provide students with a Certificate of Initial Mastery by 10th grade, which leads to a Certificate of Advanced Mastery. New Jersey adopted the State Education Reform Act of 1993, which establishes statewide curriculum frameworks and performance-based credentialing for every school district. Hawaii has passed legislation that designates the State as the "liable party" for students participating in a work-based learning experience at the job site. Iowa enacted a measure that established Career Pathways and an Iowa Invest Program, and includes an Iowa Post-secondary Enrollment Options Act. West Virginia has adopted legislation that codifies the States' STW plan. Kentucky has passed the Kentucky Education Reform Act, which has supported its STW efforts, and has also passed its STW legislation, which puts in place the State STW organizational structure and an employer-led curriculum initiative. Indiana's existing Education/Workforce Development legislation forms a solid foundation for the State's STW system over five years.*

States use different STW policy structures, including: workforce development/human resource councils; STW councils or interagency teams; Governor-appointed task forces, and State Commissioners of Education

Local Partnerships are the essential building blocks for STW systems. STW must develop strong support at the local level for the initiative to succeed in the long run. These partnerships are charged with creating and linking school-based and work-based learning opportunities. Partnerships and implementation strategies are as diverse as the communities they represent.

Examples of Local Partnership Structures

- The **Front Range School-to-Work Consortium** (FRC), in **Boulder, Colorado**, is composed of Arapahoe Ridge Middle College, the Boulder County Employment and Training Center, Boulder Valley School District, and the Westminster campus of Front Range Community College. The governing board includes business, industry, and labor representatives, community-based organizations, and other stakeholders. The FRC places particular emphasis on the role of community colleges in STW systems, as evidenced by the innovative role of Arapahoe Ridge Middle College in FRC's implementation strategy. The school contains high school grades 9-12 and community college-level classes for grades 13 and 14, providing students a sequence of courses linking high school and post-secondary education.

- The **East San Gabriel Valley School-to-Work** Partnership, near **Los Angeles,** builds on a history of working together in partnerships that dates to 1970, when collaborative agreements were reached to develop four area vocational schools called Regional Occupational Programs

(ROPs). The ROPs in turn formed further partnerships with more than 500 businesses to offer worksite learning opportunities coordinated with school-based learning. The school districts and ROPs feed into the area's three community colleges and its private and public four-year colleges and universities. Additional partners in the STW system include the Los Angeles County Private Industry Council, the California Employment Development Department, the Teamsters Union, and student, parent, and community organizations. The STW funds will help school districts in the partnership that have more fully developed STW systems serve as demonstration sites to provide technical assistance to other partnership districts. These demonstration sites, configured as "Learning Communities," participate in curriculum and staff development, field test and implement partnership strategies, and share "best practices" with other schools. Evaluation of partnership activities is being conducted by the University of California, Riverside.

Federal Strategies and Activities

At the **Federal** level, the National School-to-Work Office (NSTWO) is jointly administered by the Departments of Education and Labor, with staff drawn equally from each Department. The Departments' regional office staff work closely with State and local grantees.

Federal leadership supports STW's emphasis on State and local flexibility while maintaining accountability for Federal funds. There are no STW-specific regulations for State and local programs. The Departments of Education and Labor also promote linkages between STW and complementary Department of Education and Labor programs such as those authorized under the Carl Perkins Vocational and Applied Technology Education Act, the JTPA, Goals 2000, and the Elementary and Secondary Education Act.

Most STW funds appropriated (92.5 percent) go to State and local initiatives. The remaining money supports State and local partnerships at the national level. STW systems require new levels of participation, and a new breadth of partnership. In addition to administering grants, the Departments have launched a broad information and technical assistance effort to address the concerns and needs of all stakeholders.

The National Investment Strategy

The Act provides: **State and local "venture capital" grants,** and **national leadership activities** such as research and demonstration, a performance measures system, a national evaluation of funded programs, and training and technical assistance. These activities are managed through the NSTWO.

Grants: Venture Capital for Systems

Federal grants serve as seed money to help STW systems grow. They support collaborative development and implementation of STW systems. States, communities, territories, and American Indian tribes and organizations receive at least 12 out of every 13 Federal dollars

appropriated. The STW initiative is based on a "roll-out" strategy that includes a phased funding plan and implementation timetable for establishing comprehensive STW coverage. This strategy considers available resources, establishes funding and partnership criteria; identifies entities most ready to implement STW systems, and addresses technical assistance needs to bring all STW partnerships to a consistently high level of quality in a timely manner.

Descriptive examples are included to illustrate how these grants are used.

State Grants

- **State Development Grants:** All 50 States, the District of Columbia, and the territories have received non-competitive STW development grants. These are designed to help States begin developing statewide STW systems. They may be renewed until a State receives an implementation grant. Funds may be used flexibly. A total of $32 million has been awarded, with the average grant about $430,000. More than $1 million have been awarded to the seven territories.

- **State Implementation Grants:** One-time, five-year venture capital investments are intended to help every State and territory establish statewide STW systems. As appropriations permit, new implementation States are added each year through a competitive process. States receive funds when they present comprehensive STW plans and demonstrate their readiness to implement them. The selection process utilizes the expertise of peer reviewers representing many stakeholders, as well as Federal staff.

  Twenty-seven States have received a total of $204 million in implementation grants through this competitive process. First-year awards range from $1.3 million to about $20 million. Eight states received grants in the first competition in 1994, and 19 states were added in 1995. An additional 10-13 States will be chosen in the fall of 1996.

Local Grants: Most Federal funds that a State receives in its implementation grant must, by statute, go to local partnerships. The law also provides funding for direct grants to local partnerships that are ready to implement, but are located in States not yet ready for implementation, or are in States in their first year of their implementation grant (Local Partnership Grants), and special direct funding for high-poverty communities (Urban/Rural Opportunity Grants). The Act, and Federal efforts to implement it, are designed to ensure that funding stimulates innovation and grassroots activity while

Current Implementation States

Alaska	New Hampshire
Arizona	New Jersey
Colorado	New York
Florida	North Carolina
Hawaii	Ohio
Idaho	Oklahoma
Indiana	Oregon
Iowa	Pennsylvania
Kentucky	Utah
Maine	Vermont
Maryland	Washington
Massachusetts	Wisconsin
Michigan	West Virginia
Nebraska	

complementing State policies and priorities. About 100 communities will have received a total of $68 million in direct Local Partnership or Urban/Rural Opportunities grants by the end of September 1996.

- **State-funded local partnerships:** Most funding received by States must go to local partnerships to develop local STW systems for in-school youth and school dropouts. This amount is 70 percent in the first year, 80 percent in the second year, and 90 percent in the third and succeeding years of an implementation grant.

- Direct Federal **local partnership grants**: Direct competitive grants are made to local partnerships in States that have not yet received an implementation grant or are in their first year. These partnerships can be practical models, informing State system-building efforts, and serving as resources for other local partnerships. After States receive their implementation grants, they incorporate local partnerships into their second-year funding plan, and the direct local partnership grant ends. Currently, there are 46 local partnership grants. Six other partnerships that received Federal grants in 1994 are now State-funded.

The Benefit of Experience: How Local Partnerships Can Help Guide State Directions

The **Workstart Consortium**, comprised of two regional entities from across the State of **Iowa**, received a local partnership grant in 1994 and 1995. The State was awarded a STW implementation grant in 1995, and has now committed to partnering with the Workstart Consortium. Workstart was considered such a valuable resource for the emerging State system that the State hired a Workstart coordinator for the State headquarters as the Iowa implementation effort got underway. The State also paid half the local coordinator's salary and gave the consortium priority access to State grant money in the second year of implementation. Site visits to Workstart were conducted and networks were developed. Workstart partners, in conjunction with the State, provided staff development for new implementation sites, helped produce content for training institutes, and acted as an informal task force on a variety of issues. As a result, the State, the Workstart Consortium, and new local partnerships are developing an even more expansive view of STW than the one initiated by the Consortium. They will focus on the elementary as well as the secondary school level, and will adopt broader career pathways. Workstart's ongoing evolution, particularly in the area of building partnerships and in joining the State's effort to expand and sustain the system, offers valuable lessons.

Direct Federal **Urban/Rural Opportunities Grants:** More than 50 grants have been awarded to provide targeted resources to high-poverty areas because of the special needs of youth and the lack of local job opportunities. Ten percent of the Act's appropriation must be used for these grants. They provide up to five years of support for local partnerships in communities with poverty rates above 20 percent for youth under 22. To leverage additional support, there has been an emphasis on coordinating grants with complementary efforts like the

Empowerment Zone/Enterprise Community initiative.

Urban/Rural Opportunities Grants: Innovative Strategies for Urban High Poverty Areas

The Taft-Career Academic Program (T-CAP) is in a **Cincinnati** school in an area with high poverty, severe crime, and low academic performance. STW funds help advance this program, which has claimed to decrease dropout rates, keep young people in school and off the streets, and graduate students who are well-prepared for successful careers.

T-CAP requires that all regularly attending students -- not just those who indicate a vocational interest or meet qualification requirements -- participate in a comprehensive STW program that includes work-based learning experiences. Students are introduced to the world of work beginning in ninth grade, when every student begins career exploration by visiting a company in each of four career paths: Information, Communication and the Arts; Manufacturing, Engineering and Technology; Health and Human Services; and Business and Commercial. In 10th grade, students develop work-related interpersonal skills, and are provided job-shadowing opportunities to help narrow their career choices. Most students choose a career path in 11th grade, and begin paid internships in the second semester. These continue through 12th grade, and many students extend their studies to post-secondary education.

Students are counseled by trained youth advocates who serve as mentors, providing support and nurturing that is too often absent from young people's lives. They are hired by the Cincinnati Youth Collaborative, which includes students, parents, schools, businesses, religious organizations, city government, and service organizations that link T-CAP to a comprehensive set of youth services.

Urban/Rural Opportunities Grants: Innovative Strategies for Rural High Poverty Areas

Pacific High School is a small school in an economically depressed stretch of the southwestern **Oregon** coast. Despite limited work-based learning opportunities within 25 miles, dedicated teachers and administrators have created a student-run corporation with subsidiaries devoted to video production, agriculture, and technology services. The company, Pacific Web, has a 10-member student board, and more than a third of the school's students are active in the business. Twenty percent of the corporation's profits goes for operations and administration; 40 percent, to develop the three subsidiaries, and 40 percent, to a scholarship pool. Students involved with the firm can apply for scholarship funds for continuing education for six years after they graduate.

Pacific Web's Young Productions has a school-based video lab, where students produce videos for local businesses and organizations. In the company's agricultural division, students are developing an experimental farm with a one-acre cranberry bog, two small greenhouses, and a classroom. Students have researched water rights, permits, and environmental impacts, and obtained estimates for pond development and materials such as sand, rock, and irrigation pipe. Based on these estimates, the bog has been prepared for a February planting of cranberry vines. The primary purposes of the farm are to: 1) provide students with work experience, skills and relevant learning, especially targeted to potential employment in the area; 2) test new methods of farming to benefit local cranberry growers; 3) grow products in the greenhouse to support the farm, and provide some small income to offset expenses and possibly provide surplus for scholarships and expansion. In Pirate Technologies, the technology

subsidiary, students maintain and repair computers, VCR's, and other consumer electronics products. They also designed and built their own remote-controlled submarine, equipped with a minicamera for underwater filming.

In all three subsidiaries, students learn entrepreneurship, and are exposed to a variety of aspects of the industries. Students involved in corporation subsidiaries apply skills learned in classes, including English, accounting, math, technology, science and welding. Through the corporation board, the students learn skills, including management, legal issues, risk assessment, decision making, time management, and how to run meetings. While industry-run corporations focus on high productivity, marketability, and quick turn around, the student-run corporation focuses on the learning process and experiences ongoing student turnover and constant start-up issues. Students involved with the farm experience the same challenges as other farmers, including delays and disruptions in operations due to weather, the growing cycle and other external factors.

Direct Federal **Indian Program Grants** support the development and implementation of STW systems for Indian youth. Eighteen grants have been awarded thus far, totaling $1.8 million. The strategy for implementing the provision for Indian youth was developed collaboratively by the NSTWO staff, representatives from the Department of the Interior's Bureau of Indian Affairs, the Department of Labor's Division of Indian and Native American Programs, the Department of Education's Office of Indian Education Programs, and the National Advisory Council on Indian Education. The strategy is structured to help tribal partnerships develop comprehensive systems.

Indian Program Grants: Collaboration and Community Planning

The **Yakama Tribal School-to-Work Partnership** in **Toppenish, Washington** brings together tribal leaders, Heritage College, the Yakima Valley Technical Skills Center, the Fort Simcoe Job Corps Center, and private organizations. The Yakama STW Director, Jim Smith, is enthusiastic about his school's involvement of tribal and business leaders in shaping the futures of their youth through education. This collaboration benefits the tribe as well as individual students by better preparing Indian youth to assume responsibility for managing tribal resources, including more than 300,000 acres of timber for selected harvest. Tribal development and educational goals come together, as students integrate academic and occupational skills in a practical context. For example, students in a Career Awareness course used high-tech "geographic information/global positioning systems" in a class activity. The tribe utilizes this technology for many purposes, including managing its timber holdings and sales, and pinpointing and controlling insect infestations.

School administrators and faculty are also integrating various Labor and Education Department program funds, including STW money. They are working to create a comprehensive system that supports student achievement. School personnel, the school board, and parents collaborate to prepare a comprehensive school reform plan than establishes objectives for change, and determines how all resources will be used to further those objectives.

National Supporting Activities - Technical Assistance

The **National School-to-Work Learning and Information Center**, operating since 1995, is the linchpin of technical assistance and outreach efforts. The Center uses the latest information technologies to function as a national hub for collecting and disseminating information on STW activities. Its services are available to State and local STW partnerships, employers, schools, labor organizations, parents, students, and the general public, and are customized to meet their needs.

The Learning Center also helps States gain access to technical assistance from a national corps of experts. The **STW Technical Assistance Resource Bank** offers each implementation State a $125,000 line of credit so that States can purchase assistance in areas like curriculum development, professional development, and partnership-building. The Center manages these lines of credit, helping States identify technical assistance needs and contracting with appropriate providers from the Resource Bank. The Center works with a peer review group formed to evaluate its effectiveness in meeting users' needs, and represents various types of grantees. Twenty-two of the implementation States have used their lines of credit.

State Implementation Meetings are held regularly involving implementing States and the NSTWO to provide an update of national activities supporting STW, and to allow States to share experiences, best practices, and strategies.

The **School-to-Work Institute** offers intensive, hands-on learning, to help State and local STW partnerships delve deeper into topics and systems-building elements necessary to achieve comprehensive systems. The NSTWO held a first four-day "pilot institute" with teams from 11 States and three local partnerships in August 1996. Additional institutes are planned, and State and local partnerships are encouraged to use them as a model for STW action planning.

Four regional **Data and Evaluation Conferences** are being held across the country to provide a forum for discussing the Federal, State, and local partnership evaluation and data collection, as well as ways of utilizing data to improve programs among State and local partnerships.

Targeted Technical Assistance to Development Grant States also is provided for States that have not yet received implementation grants. This has included:

- Site visits after the States' first nine months of development funding to determine how much additional development funding was necessary based on expenditures and achievements, and identify technical assistance needs.

- Development and distribution -- with the Directors of the Oregon and Massachusetts Implementation initiatives -- of a "State Planning Guide for Comprehensive Systems" in 1995 to help State partnerships assess development needs; build long-term strategies, and form action teams to address system gaps.

- Assignment of a regionally based STW Office contact for each development State, drawn from regional offices of the Departments of Education and Labor, to enhance the effectiveness of Federal customer service to States.

- Sponsorship of a multi-day, on-site assessment service performed by technical assistance providers. These technical experts work with development grant State partnerships to identify areas for improvement and specific strategies to further progress toward implementation. To date, 21 development grant States have opted to participate in the voluntary assessment process.

Human Resource Development Institute (HRDI)/AFL-CIO Collaboration. Unions have a key role in building systems and transforming workplaces into active learning environments. They are an important stakeholder that can provide entry into many workplaces because of their established collective-bargaining relationships with employers. Some early STW systems demonstrate that unions are playing a leadership role in launching and sustaining exemplary initiatives. The Communication Workers of America and U.S. West, for example, developed an apprenticeship model linked to secondary and post-secondary institutions. The Jobs Skills Partnership Program that involves Southern California Edison, the Utility Workers of America, and the International Brotherhood of Electrical Workers provides students opportunities to work in the utilities industry side-by-side with mentors.

A grant to HRDI -- the AFL-CIO's education and training arm -- will help strengthen the participation of organized labor in STW activities by building ties between schools, unions, training and job opportunities in implementation States. Best practices are being documented and disseminated to labor and business through publications, conferences and technical assistance. The American Federation of Teachers is helping to identify high-quality STW initiatives that can provide models for school districts. The HRDI is also helping unions that want to develop STW opportunities for students in their communities.

Unions as a Catalyst for School-to-Work:

Initiated by the United Auto Workers (UAW) Local 659, the Manufacturing Technology Partnership (MTP) program in Flint, Michigan began in 1992 as a collaborative effort between high schools, post- secondary institutions, General Motors and the UAW. The MTP includes the North American Truck Platforms, UAW Region 1-C and the UAW Solidarity House. This effort grew out of an anticipated shortage in the skilled trades workforce at the GM plant, and has grown to include more than 20 other area manufacturers that provide work-based learning opportunities. The MTP is open to all high school juniors and seniors in 21 school districts, and specifically recruits and supports young women, who make up about 40 percent of the participants.

The MTP program is designed to help students find jobs in skilled trades by passing apprentice tests. If no openings exist when a student takes the test, he or she may enter and complete an Associate degree program in applied science at a local college, with tuition and expenses completely covered by aid from Federal, State and local sources, including Flint Metal Fabricating.

National Supporting Activities - Public Awareness

National Employer Leadership Council Business leaders are keenly aware that building a stronger link between education and the world of work offers new opportunities to prepare the future workforce. In early 1994, a working group of industry representatives began collaborating with the Departments to ensure that business concerns were addressed in the STWO Act. The National Employer Leadership Council (NELC), which grew out of this

effort, has the mission to increase business involvement in STW efforts to achieve high-quality learning for all students.
Beginning with 18 founding-member companies, the Council's expanding ranks currently number 56 firms. NELC will mobilize employers and coordinate their efforts with school systems, organized labor, parents, students, and State, Federal and community organizations.

NELC member companies have spent more than $47 million of their money since May 1994 on STW initiatives. The NELC has developed an "Employer Participation Model" to help businesses of all sizes understand the wide array of STW activities that can be customized to fit a company's resources and needs. This model will be publicized nationwide. The NELC is also preparing a strategic plan that will help the Departments and the NSTWO mobilize a broad agenda for engaging employers in school-to-work. Products for different target audiences include an employer survey, a resource guide with 110 examples of employer programs and initiatives, samples of strategic plans for communities to use to engage employers, a multi-media information kit for speakers, and STW posters. These are being produced and distributed by the NELC and Scholastic Inc.

An NELC Flagship Initiative:
Ford Motor Company's Academy of Manufacturing Sciences

Ford's commitment to STW is demonstrated in the Ford Academy of Manufacturing Sciences (FAMS). FAMS is an innovative, two-year program that prepares high school juniors and seniors for careers in manufacturing, engineering and skilled trades. FAMS' academically rigorous program introduces students to the concepts and skills needed to understand, profit from, and manage the complex and rapidly evolving process on which tomorrow's manufacturing will depend. The program consists of four accredited semester courses, taken in sequence during grades 11 and 12, plus a coordinated manufacturing work experience. FAMS is a partnership between a school and local manufacturers. Each partnership has coordinator-assigned faculty members and a Business Advisory Council. Developed by Ford as a career academy in 1990, FAMS curriculum is today available nationwide.

Public Involvement. This effort is intended to increase public awareness of the benefits of STW among stakeholders, and address the needs of STW customers. Parents, students, employers and others can obtain immediate answers to questions about STW through the Learning Center's 800-number "Answer Line" -- which received 6,000 queries during its first year -- as well as an Internet home page (already 50,000 "hits" per month) or by e-mail. The Internet Web site (http://www.stw.ed.gov) houses all information coming out of the NSTWO, materials and products developed by grantees, as well as research on STW. Customers are also directed to relevant publications, meetings, conferences, training sessions, and databases on key STW contacts, organizations and practices. A public outreach group, including communications specialists in the current 27 implementation States, national staff from both Departments and the NSTWO, and members of the business community, is directing the outreach strategy. A television special, "Jobs: The Class of 2000," was produced by WQED-TV (Pittsburgh) for national broadcast by PBS on September 20, 1996. In addition, prominent figures have been provided by the NELC, the Advisory Council for School-to-Work

Opportunities, and the Miss America Organization, among others, to offer personal testimony on the impact that STW has made in their lives, communities, businesses, and schools.

A National Spokesperson. The 1996 Miss America, Shawntel Smith, chose STW as the platform for her year of service and made hundreds of speeches on behalf of STW. The Miss America Organization also sponsored a national STW Day of Service to build public awareness. It included former Miss Americas and State and local pageant winners and had nearly 100 events, including demonstrations of STW initiatives with students, educators and mentors. Given the Organization's tradition of recognizing a woman who has most inspired Miss America, Shawntel Smith selected JD Hoye, Director of the NSTWO, to receive its Woman of Achievement Award.

Advisory Council for School-to-Work Opportunities

The Advisory Council for School-to-Work Opportunities is a 44-member body established in the fall of 1995 to provide assistance and strategic advice to the Departments of Labor and Education on implementing the Act. In addition to their national advisory role, members are encouraged to serve as champions and resources on STW issues in their professions or communities. The Council is broadly representative of stakeholders in the STW enterprise, including educators, employers, organized labor, community groups, parents, students, and State and local government. It meets twice a year, and is led by John McKernan, former Governor of Maine, and Dr. Jacquelyn Belcher, President of DeKalb Community College in Decatur, Georgia. Following its first meeting in March 1996, the Council submitted a report to Secretaries Reich and Riley, including recommendations in five priority areas: education reform; engagement of the workplace; skill standards, credentials and assessment; technical assistance and capacity-building, and marketing.

PART III: MEASURING SCHOOL-TO-WORK: INITIAL FINDINGS

The true measure of STW initiatives -- for students, employers, schools, and the nation -- necessarily will take many years, as teen-agers progress from high school into the workforce, through varying degrees of intervening education and training. The value of learning what it is -- and what it takes -- to be a nurse, a machinist, or a software developer in a systematic fashion as a teen-ager, rather than haphazardly as a 25- or 30-year-old, will only be realized years later, embedded in data on national and corporate output as well as individuals' living standards and sense of career fulfillment. However, research suggests that connecting the workplace and in-school learning benefits employers and students by strengthening student motivation and boosting student retention rates, improving academic and skills standards, increasing labor market awareness, and enhancing productivity.

Currently, we measure progress in three ways. The first includes a set of progress/performance measures developed to provide information on programs implementing the core components of STW, participation by employers, schools and students in STW systems, and outcomes for participating students. The second is a national evaluation of STW that is already under way; the final report is due in the year 2000. Finally, short-term and long-term research is also being conducted.

***Progress/Performance Measures*:**

The objectives of the progress/performance measures include: 1) developing a common language around STW so that data from different partnerships and States will be comparable and of high quality; 2) providing a framework within which States can design their own STW data systems for program purposes, and 3) charting the progress of STW system-building nationally through the documentation of participation and outcomes of students and dropouts, educational institutions, and employers, as well as the amount of new, redirected and in-kind resources leveraged by State and local partners.

This framework can provide States and localities with reliable performance-based information to gauge progress and identify areas requiring special intervention. It also will allow nationally aggregated information to be generated on STW initiatives, which can be reported to Congress and others. A glossary of terms to describe STW aspects has been produced to increase understanding among stakeholders in all States.

The progress measures instrument includes information on the participation of students, schools, and employers in *local* STW initiatives, and on the system-building progress of local partnerships. It is completed by each local partnership funded directly by a Federal STW implementation grant and each local partnership funded by a State STW implementation grant. Local partnerships forward their data to the State STW office.

This progress measurement tool was designed to capture the unique nature of system-building, and was developed through a dynamic process involving representatives from many

of the 27 implementation States, local grantees and the NSTWO. These measures continue to be refined based on State and local experience. Data are to be collected annually. This report includes data through 1995.

Given that States are at different stages in their system-building, not all States and partnerships had sufficient data to complete all parts of this survey. To ensure accuracy, analysis was conducted only when data were available from all key components (i.e., schools, employers and students) in the local partnerships. As a result, progress on students and employers was reported and analyzed from 10 States, progress on schools from 11 States, and progress on leveraging resources from 17 states.

- For the 10 States with complete data, 210 partnerships reported participation in STW by 135,000 businesses. These employers provided more than 39,000 work-based learning sites and nearly 53,000 slots for students.

- Approximately 500,000 students in these 210 partnerships, representing 1,800 schools, are engaged in "high intensity" STW experiences. This designation is used for STW systems that offer curriculum that integrates academic and vocational learning, and provide work-based learning experiences connected to classroom activities. The Departments are exploring how to develop STW progress measures that evaluate achievement of high academic standards and linkages to post-secondary institutions.

- In the first year after the STWO Act became law, data from the eight original States indicated that for every Federal dollar invested, $2 in other public and private funds were invested. These included new contributions, funds redirected from other programs, or in-kind contributions, such as staff or facilities. Consequently, in the second year, to get a better sense of the scope of investment by non-Federal sources, only the level of new funds committed to STW system-building efforts was reported. Data from 17 States showed that $1 in new funds alone was invested for every $2 in Federal investment.

Since these data reflect only a subset of the States and local partnerships awarded implementation funds, the actual numbers of schools, students, and businesses participating in STW is much greater than what we are reporting.

The next round of data submitted by the States and local partnerships will reflect experience from the first six months of 1996, and will be analyzed and available in the fall of 1996. With each submission, more States and local partnerships will be able to include complete data.

National Evaluation

In early 1995, the Departments contracted with Mathematica Policy Research, Inc., to undertake a national STW evaluation. This five-year study will:

- Assess student education and employment outcomes
- Describe participation of students, schools, employers, and other organizations
- Document implementation progress at the State and local levels
- Identify promising practices and barriers to progress

The evaluation includes three major data collection and analysis components:

- Student surveys will be conducted in a sample of eight implementation grant States. Three cohorts of 12th-grade students, selected in the spring of 1996, 1998, and 2000, will be surveyed about their high school experiences. Follow-up interviews will be done 18 months later about their post-secondary and/or labor market experiences. High school transcripts will be collected to provide further information about their course-taking patterns and academic performance.

- Local partnership surveys will collect information on partnership organization, STW system features, links between secondary and post-secondary education, employer participation, and aggregate measures of student participation in specific program activities. They will be conducted in the fall of 1996, 1997 and 1999.

- In-depth case studies will be done on program design and implementation, based on site visits in 1996, 1997 and 1999.

The first phase of the evaluation, completed in May 1996, provides early information on the progress in developing STW systems in States with Federal implementation grants. Longer-term evaluation of STW implementation will result in periodic reports on State and local efforts to build STW systems, and students' STW educational and labor market experiences.

The first report is based on discussions with the 27 State STW Directors who oversee implementation grants awarded thus far. It is limited to an overview of State governance, partnership formation and funding, and State directors' assessments of progress and barriers.

Key findings from the national evaluation concern the:

Organizational Framework for STW

- States are evenly divided between those that have created special entities with

primary policy-making responsibility for STW and those in which the board, council, or commission responsible for STW also oversees other general workforce or human resource development policies.

- The leaders of STW systems are appointed by different parts of State governments. The STW director is named by the State's chief education official or a subordinate in 11 of the 27 States. In the remaining States, the STW director is chosen by the Governor, Lieutenant Governor, or an interagency commission.

- Fourteen States have established, or plan to create, a two-tiered system of sub-state regional and local partnerships. The primary purpose of regional STW bodies is to provide technical assistance to local partnerships, and to coordinate STW with other workforce activities.

- So far, 818 local partnerships have received funds directly from the Federal government for planning or implementation activities. Several States have not yet awarded funds locally, and several others intend to make additional awards. Consequently, the number of local STW partnerships in the 27 States is likely to increase.

State Use of STW Funds

- Development grants are most commonly used to fund the initial efforts to create a STW infrastructure, according to State Directors. This includes forming sub-state partnerships, developing a State plan and an application for an implementation grant, and crafting strategies to improve public awareness of STW concepts.

- When States received implementation grants, they funded sub-state partnerships as well as technical assistance, curriculum development, and other activities.

- Many types of entities serve as fiscal agent for local partnership grants. Financial responsibility at the local level is assumed most often by school districts, community colleges and private industry councils. Most States do not have any particular requirement about who should serve as a lead agency with responsibility for the funds. Consequently, in most States, several types of agencies are involved with local partnerships. In **Kentucky**, for example, six different kinds of fiscal agents serve in local partnerships.

Implementation Progress and Challenges

- Considerable progress has been made, according to State Directors, in the areas

of: 1) State-level interagency collaboration, 2) formation of local partnerships, and 3) employer involvement in local partnerships. Challenges often named by State Directors included a "lack of understanding of key STW principles" as a major obstacle at both the State and local levels. Others were concerned about creating and sustaining collaboration among various public and private entities.

- Employer involvement in STW was an area where State directors were both pleased with the progress they had made and concerned about obstacles they face. Their comments most frequently cited employer concerns about three issues: 1) employer liability, 2) child labor laws, and 3) a lack of financial incentives.

Ongoing Research

National Employer Survey

The Department of Education's National Center on the Educational Quality of the Workforce (EQW) produced two exploratory analyses. These addressed: whether employers who have an effective connection with schools have lower recruitment costs because they are more successful in choosing new workers, and whether they are more likely to invest in training first-time workers during their first year of employment.

Findings from the first study indicate that establishments that use school measures such as grades, teacher recommendations, and the reputation of an applicant's school to screen job applicants have less turnover among new hires. The findings from the second study indicate that the manufacturing and non-manufacturing establishments offering work-based learning are most likely to be large firms employing more than 1,000 workers, to have relatively experienced workforces, to be high-tech, to have well-educated workforces, and to report increases in skill requirements among either manager or production workers. This survey will be re-administered in the spring of 1997 and 1999.

Bureau of Labor Statistics - National Longitudinal Survey of Youth Data Collection

The National Longitudinal Survey of Youth conducted by the Bureau of Labor Statistics has been augmented to collect information that measures the extent to which schools offer STW activities and students participate in these activities. Traditional demographic, educational and labor market data on students will be supplemented by additional items relevant to the STW experience, such as participation in career majors, job shadowing, career counseling, work-site activities, and participation in various STW activities. In addition, a survey of school principals will collect data on school policies and practices related to STW activities. Preliminary data are expected

in the spring of 1997.

Short-Term Research

Educational Funding Policies and Implications for High School Dropouts

The NSTWO provided funding for a study undertaken by the National Council of State Legislatures (NCSL) on how high school dropouts are affected by State educational funding and attendance policies. The implications of these findings are important, because the degree to which funding can follow students is essential in communities' ability to provide STW opportunities for school dropouts through alternative learning structures.

Although no State laws were found that r*equire* funding to follow at-risk and dropout students into STW programs specifically, no laws were discovered that *prohibit* it. The NCSL survey found that some States are allowing State per-pupil funding for high school students to be used for learning opportunities outside the regular classroom.

Assessing Experiential Learning

The National Academy of Sciences' *Transition in Work and Learning: Implications for Assessment* is a project to help decision-makers in the public and private sectors evaluate the strengths and weaknesses of alternative methods for measuring skills and competencies of high school graduates entering the labor force or continuing to post-secondary education and training. The principal issues to be addressed are the scientific validity, reliability and fairness of alternative selection and screening tools, legal and ethical implication of alternative credentialing and certification systems. This report will be submitted to the NSTWO in December 1996.

PART IV: KEY SCHOOL-TO-WORK SYSTEM ELEMENTS

Since the Act became law, States and the NSTWO have identified and refined eight core elements that are key to developing STW systems. These are based on partnerships' experiences in applying the broad guidelines laid out in the Act to build STW systems. These "Eight System-Building Elements" help guide the NSTWO's interaction with States and local communities with technical assistance to ensure that States are building workable, durable systems.

As implementation of the Act moves forward, the States and the NSTWO regularly revisit the elements to help pinpoint what is possible, what is unrealistic, and what is essential in building systems. There is strong consensus on the part of implementing partnerships, particularly at the State level, that progress in these eight areas helps define STW activities as system-building rather than merely a patchwork of educational reforms or training programs. The elements are:

1. STW opportunities are intended for all students.
2. STW elements are present on a continuum throughout the school curriculum.
3. Staff development investments and capacity-building approaches include all levels of professional staff associated with STW systems.
4. STW systems enable students to explore "all aspects of an industry."
5. Employers and labor unions play a key role in building STW systems.
6. Learning is organized around career majors, which provide a context for learning tied to students' interests and allow for connections between school-based and work-based learning.
7. States have identified a "roll-out strategy," and utilize an appropriate "sub-state" structure to manage system expansion.
8. All partners are responsible for ensuring that their systems yield results, which are measurable and drive continuous improvement efforts.

Examples illustrate the importance of these elements.

1. *School-to-work opportunities are intended for* **all** *students.*

STW systems incorporate principles of flexibility, high academic and skill standards, and wider opportunities for all students. Through changes in curricula, they are designed to provide equal benefit to a wide range of youth, including students with disabilities, school dropouts, and academically talented learners. STW systems operate from the premise, highlighted in the Act's introductory sections on purpose and Congressional intent, that many students learn better and retain more when they learn in context, rather than in the abstract, and that integrated work-based and school-based learning can be very effective in engaging student interest. Optimally, a system is designed to balance the need for flexible components that can adapt to the requirements of *any* student with the need to maintain a consistent base

of quality and core features that enrich learning, build connections, and include high standards for *every* student.

States have begun to initiate strategies to reach all students, but integrating previously isolated programs and changing the education environment to effectively provide academic and work-based learning for all students is a challenge. Changes occur slowly. Implementing partnerships have particular difficulty in providing services to school dropouts, because they lack experience in applying STW components in alternative learning environments, and to learners with disabilities, because of their special needs. Misunderstandings about STW -- treating it as enhanced vocational education targeting the "non-college-bound," and downplaying the fact that all students can benefit from contextual learning benchmarked to high academic standards -- may lead partnerships to exclude college-bound students from system plans. Efforts are under way to assist State and local grantees in making STW work for all students.

Moving Toward Reaching All Students

The State program reports and site visits to Implementation States have found progress reaching a broad range of students. For example, local partnerships in **Ohio** must include representation from all youth groups, including special education, minorities, and others, to be eligible for State grant funds. Ohio is also working with distance learning opportunities as a strategy to include more young people. **Iowa** requires all regional partnerships to develop a plan to pool resources and develop strategies to serve out-of-school youth, and has established a statewide STW Alliance Program that serves out-of-school and disabled youth. Local partnerships in **Colorado** must incorporate the State's ongoing successful "systems change" model for disabled youth. **Oregon** has a statewide youth transition program that serves youth with disabilities and others who are at-risk, and provides continuity of services as these students move to college or jobs.
Teachers, transition specialists and vocational rehabilitation counselors work with parents and students in developing individualized plans.

THE ELEMENT IN ACTION:*All Students*

In the fall of 1993, **David Douglas High School** in **Portland, Oregon,** and the Oregon Business Council joined in a partnership to design a high school program that would meet the expectations of the Oregon Education Act for the 21st Century, and successfully develop a model that could be used by other districts and communities. Their vision was grounded in David Douglas's school-improvement effort, Project STARS (Students Taking Authentic Routes to Success).

Project STARS structures the school's learning environment with an eye toward identifying and planning for long-term educational and career goals. To begin building connections between high school and the world beyond high school, every student entering David Douglas is involved in an intense semester of career exploration in the ninth and 10th grades. A flexible, individualized education plan is developed for the high school years, as well as steps beyond. Much like a college curriculum, the ninth and 10th grades are devoted primarily to general study, reflected in Certificate of Initial Mastery courses, and the 11th and 12th grades to working within a major area of study, toward a Certificate of Advanced Mastery.

Students participate in learning experiences through a variety of hands-on projects, including the operation of numerous school-based enterprises; job shadowing and internships with the school's external partners; and class and community service projects with peer teams and outside adult mentors.

2. *STW components are present on a continuum throughout the school curriculum.*

In STW systems, career awareness and exploration begin as early as possible, with students choosing a career major by the start of 11th grade. Career awareness and exposure activities, and selecting a major allow students to choose a context in which to learn and apply their skills in practical situations. Together with connecting activities, this provides learners with the information, tools and support to make informed choices about their academic and career goals.

In implementing this component of the Act, States are putting STW principles into simple exercises for younger students, as well as offering sophisticated experiences for high school seniors. The system builds incrementally, preparing students for each progressive step, and providing integrated work-based and school-based activities that grow richer and more challenging as the student matures. STW principles are applicable across the core curriculum, although decisions about shaping curriculum are made entirely at the State and local levels. Career awareness and exposure, contextual learning, and a sense of each subject's real-life relevance can help make learning any subject come alive and become meaningful for students.

Progress in building linkages with post-secondary education is most evident in the involvement of two-year institutions. Their early, active involvement in STW systems appears

natural, since community college connections in State and local STW systems are based largely on earlier Tech Prep efforts. Many local partnerships reach agreements between secondary and post-secondary institutions on issues like dual enrollment and obtaining credit for alternative learning, and some States have designated their STW geographic areas based on access to community colleges. The involvement of four-year institutions in some State STW systems is just beginning. As yet, few four-year colleges accept applied high-school course work or alternative assessment measures such as portfolios produced in many STW systems, and few teacher preparation institutions include STW concepts in their programs of study.

THE ELEMENT IN ACTION: ***Continuum of STW Elements***

The **Weber County School District** in **Utah** uses educational clusters formed by high schools and their elementary and middle feeder schools to offer a continuum of career education that makes connections between academics and work, beginning at an early age. This strategy was developed by school administrators, guidance counselors, businesses, community organizations, and parents, who recognized in the early 1990's that young people were having difficulty making transitions to life after high school.

This system starts in seven elementary schools, which conduct career *awareness* activities, such as field trips and career fairs, to help introduce students to the world of work. Classroom learning is applied to the real world so that students understand how the subjects they are learning will serve them in the future. For example, through an agreement with a local grocery store, all Pioneer Elementary School students in grades one through five visit the store, with each grade focusing on a different store component. Second graders studying weights and measurements spend time in the fruits and vegetables section to see how their classroom learning applies to the work in this part of the store.

In the two junior high schools, the focus shifts towards career *exploration*, allowing students to examine more closely occupations that appeal to them. They work with guidance counselors and teachers to focus on career options, participate in job shadowing and mentoring experiences, and prepare a career research paper in English class. All students attend an Applied Technology Day at Fremont High School, which introduces them to new careers and orients them to the high school.

At Fremont, students have access to more intensive work-based learning experiences, such as internships, which are integrated with school-based learning. While focused on specific occupations, these activities remain broad enough to ensure that career exploration continues, and that the student's career and educational options remain open. The school district is now coordinating the core career education curriculum with post-secondary institutions, to provide more specific training as youth continue to identify and refine their career choices while moving through the education system.

3. *Staff development investments and capacity-building approaches include all levels of professional staff associated with STW systems.*

If STW is to be effective for all students, implementing partners need training and staff development. For education staff, this might include opportunities for teachers and career counselors to have extended experience with employers. Staff development also might promote a shared base of knowledge among elementary, secondary and post-secondary staff in areas such as contextual learning, portfolio assessment and use of technology. Training could support school staff in jointly developing school improvement plans and investigating measures like block scheduling and improved teacher planning time. Employers and unions could learn how they can best contribute to all education reform efforts, from developing work-based and school-based components, mentoring curricula, and skill standards, to participating in employer/educator teaching teams, and helping restructure schools as high performance organizations.

THE ELEMENT IN ACTION: ***State and Local Staff Development***

How does a ***State*** provide consistent guidelines and disseminate information for training STW staff ? **Massachusetts**, for example, modeled its technical assistance efforts on those of the National School-to-Work Learning Center, contracting with the University of Massachusetts' Donahue Institute to be a staff development "broker" for local partnerships. The Institute has assembled a corps of qualified technical assistance providers from which local partnerships can select, to help the locals connect with needed services. Through the State's 1996 "Summer of Work and Learning" initiative, close to 2,000 teachers and counselors participated in externships in industry settings, gaining exposure to the work world and materials for classroom teaching. Because of the importance of training future teachers in STW principles and practices, the State Office of School-to-Work Transition convened deans of all Schools of Education in the UMass system to address new methods of teacher preparation. It is now developing a program major in contextual learning, and a three-credit STW course is offered.

Other activities include: 1) coordinating existing teacher training efforts, such as the Massachusetts Institute of Technology's Institute for Learning and Teaching, and Project PALM, a National Science Foundation project that provides training in contextual learning for K-middle school math and science teachers; 2) contracting with community colleges to develop and launch a multi-module workplace mentor training curriculum, establishing community colleges as a resource for local partnerships and employers concerning mentors' roles, and 3) utilizing in-State experts like the Bay State Skills Corporation, the Associated Industries of Massachusetts (the State's largest employer association), the Department for Public Health, and Northeastern University's Center for Labor Market Studies.

4. *STW systems allow students to explore "all aspects of an industry."*

Building on an area first emphasized in Tech Prep programs, students receive broad exposure to issues and skills related to their career of interest, rather than learning isolated task- or job-specific skills. Applied to a STW system, "all aspects" means several things:

First, for students, it means that work-based and school-based learning components provide

exposure to each component of an industry -- from sales and marketing, management and finance, to technical skills, labor and community issues, health and safety, even environmental issues -- in an integrated instructional system.

For implementing partnerships, "all aspects" means that students are presented with information on the array of occupations and careers that comprise an industry, from the most basic to the most advanced. The National Health Care Skill Standards Project -- a pilot project linking academic and occupational skills -- has identified four broad clusters of health care industry occupations: (1) the therapeutic cluster which provides treatment over time; (2) the diagnostic cluster which creates a picture of health status; (3) the information services cluster which documents and processes information; and 4) the environmental cluster which creates a therapeutic and supportive environment. Within the environmental cluster, for example, occupations could range from dietary services to hospital administration. Linking the options to the skills and credentials necessary to compete successfully for these positions gives students a clearer idea of why particular subjects and accomplishments matter, what options and salaries are available within their field of interest, what career goals make the most sense for them, and which paths to follow to reach those goals.

When I went into the engineering section, it was to learn about computer-aided design. I sure learned a lot. In the machine shop, I learned about drilling, milling, and where to get materials. In purchasing, I learned where to buy steel and the electronic components. At contract management, I learned about the overall management of a contract-- where the jobs are in the factory for that particular contract, how to keep track of how it's going, whether anything is needed like special parts, and how to get the parts.

I had a different mentor in each department. It was helpful to see the different personalities and how they deal with the day-to-day hassles.

-- David Bruce, student in the Flint, Michigan GASC Technology Center

THE ELEMENT IN ACTION: ***All Aspects of the Industry***

The **Baltimore Finance Academy** offers a range of opportunities for students attending this magnet school within Lake Clifton-Eastern High School in **Baltimore, Maryland**. Every student gains broad knowledge of the financial industry -- from security operations to international markets. A freshman year course entitled exploring financial careers introduces students to a variety of career choices, including accounting, insurance, investment, and international finance. During their sophomore, junior, and senior years, all students complete courses in accounting, economics, financial markets, security, business planning and development, banking and credit, international finance, and a quantitative course in principles of finance, as well as three semesters of computer applications and core courses in English, math, social studies, and science. This broad knowledge of finance prepares students for a range of internships in one of 26 companies. Students with broad understanding of the industry and how different aspects are related, are also better prepared to advance in a field characterized by ongoing technological and legal changes. Equipped with this knowledge and understanding, all Baltimore Finance Academy students can pursue a college degree in finance-related careers, including business, marketing, finance, and pre-law.

Students at the **Oakland Health and Bioscience Academy** in **Oakland, California** learn all aspects of the health care industry. Their knowledge of health care includes planning, management, finance, technical and production skills, technology, labor issues, community issues, safety, and environmental issues. They gain this broad understanding through a variety of learning experiences and teaching techniques. Interactive career explorations and a 200-hour hospital internship in the 11th and -12th grades expose them to the business, administrative, and clinical departments of a health care facility. For example, a student might do a photo essay on laboratory safety, or interview a hospital attorney. Students also create work-based learning portfolios, which include reflective journal entries and work samples keyed to health career standards. Projects offer an opportunity to explore different aspects of health care and how they relate to one another. Projects may simulate the decision-making processes of a health care provider. Students might play the role of public health service workers by reading a case study of a lead-poisoned child, interpreting the results of lab tests, and creating a medical management plan. Student teams explore health care delivery systems by planning a school-based clinic, and operating a student-run health education center. Through this process, they confront such issues as location, design, focus, financing, public relations, confidentiality, and treatment.

5. *Employers and labor unions play a key role in building a STW system.*

This element relates directly to several charges in the Act: first, the emphasis on employers and unions as equal partners with education in the full range of local implementation activities; second, the charge to transform workplaces into active learning environments; and third, enabling all systems to offer work-based learning to all students. This translates into a need for substantive investment and leadership by employers at the State, regional, and local level.

The practical consequence of the Act's focus on all students is a need to recruit and engage many employers. Yet employers differ in their capacity and willingness to participate in STW systems. Many States are designing employer recruitment strategies that incorporate a "menu" of options for employer participation, allowing employers to select how engaged they wish to be in supporting the system, and giving small, medium and large-sized businesses the ability to participate at levels appropriate for them.

Employers can begin modestly by providing a speaker for a career day, for example, and opt to move to higher levels of engagement, such as offering full work-based internships for students, if they choose. All involvement is valued, from providing release time for parents to participate in activities relating to their children's education, to assisting educators develop curricula or mentor-training guides, helping assess student progress, sponsoring teacher and counselor internships in industry, or developing industry skill standards.

Unions offer a unique type of access to the world of work. Through their collective bargaining experience with employers, they can be important advocates for STW. Unions also can help lead important training not only on how jobs are performed but also on subjects like workplace health and safety.

Efforts to Involve Workplace Partners

The site visits revealed that business recruitment activities are bearing fruit in some implementation States. For example, the positive experiences that many employers had with **Wisconsin**'s youth apprenticeship movement has led hundreds of businesses to become involved in STW. In **Michigan**, employers see the benefit of active involvement in STW, since they project that 100,000 skilled workers will retire in the next 10 years. The strong participation by employers and labor in the **Washington** State School-to-Work Task Force has engaged employers and unions at the local level.

Other states are providing incentives for employer participation. **Maryland** has introduced legislation proposing a tax credit for employers involved in school-to-work activities. In addition, it has set aside grant funds to provide Employer Incentive Fund grants. **Colorado's** Lieutenant Governor is chairing a CEO think tank that will provide opportunities for employers to participate in the State STW system.

All States are working diligently to build employer participation and involvement, and progress is being made using a variety of approaches. Despite notable successes and many best practices, fully involving many employers is a daunting challenge for STW system builders. Getting more firms involved will require developing and disseminating more information on how STW benefits them.

THE ELEMENT IN ACTION: ***Key Role of Employers and Unions***

The **South King County Consortium**, situated just outside of **Seattle, Washington**, is working to create a comprehensive STW system for all students in the region. The Consortium is comprised of representatives from: major employers such as Boeing, US West, and Health Tecna; small industries; labor organizations including the International Association of Machinists; all K-12 school districts in the region, including teachers and student leaders; post-secondary institutions; community organizations; and other stakeholders. One challenge is to demonstrate how school-to-work systems can support new approaches to meet the workforce demands of any fast-growing industry that is critical to the local, state, and national economy. For example, two major industry and labor partners -- US West and Communication Workers of America -- participate in the Consortium to develop a comprehensive array of school-based and work-based activities to prepare young people for high-wage, high-skill employment in the fast-growing telecommunications industry.

The Youth Apprenticeship Program in Lycoming County, Pennsylvania, which began in the early 1990s, quickly discovered that it needed participation by employers and workers to truly provide young people with relevant skills for occupational and economic success. Workers and educators now meet regularly to design effective, integrated curricula. Workers describe the type of work young people will undertake on the job, then assist teachers in developing curricula and lesson plans to teach the knowledge and skills needed. Educators ensure that classroom learning incorporates occupational applications and meets high academic standards. For example, all 11th grade participants in the metal-working trades are required to take a trigonometry course when they are introduced to its application at work. Students in their junior year are paired with workplace mentors, who introduce them to the workplace and teach them good work habits. As students take on more responsibility and are given more autonomy at work, mentors continue to play an important role by helping students meet workplace requirements and learn valuable skills.

6. *Learning is organized around career majors, which provide a context for learning tied to students' interests and allow for connections between school-based learning and work-based learning.*

Career majors help students see the "road ahead," making connections between an individual class or subject and their broader course of study, and identifying periodic checkpoints by which to gauge progress toward their goals. Current, accurate labor market information is important in helping students learn how their strengths and career goals match with growing fields and high-wage, high-skill occupations. Optimally, the career major is a sequenced program of high-quality work-based and school-based experiences that balances acquisition of knowledge with the application of that knowledge. Career majors are supported in STW systems by integrating programs and services that help students identify appropriate next steps and connect with post-secondary and employment options. Students may change majors throughout high school.

Many States are successfully beginning to identify and implement career majors. A few have encouraged the development of career majors within local partnerships. Career majors ideally are similar in different areas, for States to provide integrated curricula and help local

partnerships establish a certification system with portable credentials recognized statewide and nationwide.

Implementing Career Majors: Examples from the Implementation State Sites Visits

Many implementation States have established career majors at the State level. Others have established career majors as guidelines, but allow local partnerships broad flexibility to define their own. **Iowa** has identified six career pathways, through the leadership of the Iowa Association of Business and Industry, and organized labor, and is providing financial support through the State's Registered Career Pathways Act for local partnerships to develop curriculum models. Local partnerships select from among the six majors, which are appropriate for their community.

THE ELEMENT IN ACTION: *Career Majors*

In 1992, **Central Valley High School in Veradale, Washington** replaced a traditional school structure that tracked students into college prep, general education, and vocational education, with Student Career Opportunity Paths in Education (SCOPE). SCOPE organizes curriculum, career guidance, community resources, and the school environment around student career aspirations. School staff working with specialists in occupational analysis identified six career majors which would serve as the context for individualized education at Central Valley. The career majors reflect the strengths of the existing curriculum, the regional economy, and State educational requirements.

Students are introduced to the six career majors in the eighth grade. A flexible five-year education plan which will help to motivate and guide the students through the first year of post-secondary learning is prepared by students, parents, and teachers. Students' interests and education plans are revisited and refined each year. Students in each career path take required academic courses and are provided with a variety of career-relevant options. The elective courses reflect the broad range of possibilities within each career path, and offer progressively more advanced levels. Elective courses are often common to different career paths, and teachers must be able to apply each lesson to a variety of career interests. A lesson on the use of radio, for example, might consider radio advertising, radio as a communications tool for the military, public service uses, and technological developments, depending on the career choices of students in the class. The underlying premise is that students should see the connection between what they learn in school and the world outside.

Roosevelt High School in Portland, Oregon has designed a new four-year curriculum based on career majors and related worksite experiences. The curriculum, a part of every student's schedule, revolves around six career majors: Arts and Communication, Business and Management, Health Occupations, Human Services, Manufacturing and Engineering Technologies, and Natural Resources.

The school, including administrators, counselors and teachers, is organized into six cross-curricular teams, one for each career major. The teams develop and support the career majors curricula. Responsibilities of the teams include the development of curriculum, allocation of money budgeted for each major, and the review and revision of courses and activities. Advisory committees composed of employers in the career major areas meet periodically with the school teams and provide input for curriculum development and work-based learning experiences.

Career majors at Roosevelt, which take up at least one class a day, begin the freshman year with a course called Freshman Survey. The class develops skills necessary for success in school, as well as the workplace. The class also introduces students to Roosevelt's six career majors. In the spring of the

freshman year, students choose one of the six career majors for an in-depth focus during the sophomore, junior and senior years.

The next three years of the career majors program involves applied academic course which are utilize real-life situations in the career major to contextualize learning. In their junior year, students begin worksite internships in jobs related to their pathways, providing an opportunity to test skills learned in the classroom and to validate their career interests. In addition to applied academic courses with increasing focus on the major, advanced academic classes are available for those whose major or college goals require them. The career major focus of students' high school education helps better prepare them to choose academic programs consistent with their career goals, and will begin college or other post-secondary programs with a clear notion of the relevance of their academic studies. Work experience intensifies in the senior year, and the career major class provides specialized, work-based activities and information for students poised to begin careers or advanced studies.

7. States have identified a "roll-out strategy," and utilize an appropriate "sub-state" structure to manage system expansion.

The strength of State efforts to build and operate a statewide system depends, in large part, on how the State has established its sub-state structure. For STW purposes, States generally are divided into regions that correspond to local labor market areas, JTPA service delivery areas, educational areas such as community college boundaries or school districts, economic development areas, geographic boundaries, or other established divisions. These regions, usually governed by a partnership of key stakeholders, operate as support structures for local partnerships. They provide a vehicle for coordinating local workforce training and economic development initiatives with STW, as well as sharing best practices. Most States are funding local partnerships in tiers or rounds, over a designated period of time. Partnerships usually undertake a readiness assessment and must demonstrate through a competitive process that the partnership is ready to implement its local STW system. The roll-out plan is a means for achieving statewide coverage, by bringing locals on board incrementally over the course of the five-year period.

Reaching every community will take time. As the long process of integration and system-building continues, the most visible activity is still occurring largely at the State level. Crucial local activity follows at a slower pace, as States begin their roll out to local partnerships.

THE ELEMENT IN ACTION: ***Roll-out Strategies***

Kentucky is using 22 Local Labor Market Areas (LLMAs) as focal points for implementation and delivery of STW activities at the regional/local level. These were identified by the University of Kentucky's Center for Urban and Economic Studies, as a basis for managing the States' economic development initiative. Criteria for designating the LLMAs included *demand* issues like manufacturing concentration, economic structure, job growth rate and skill requirements; *supply* issues like population base, educational facilities, and labor force participants, and *"integrative"* issues, like transportation networks, urban areas, and government delivery systems. Each LLMA will receive three years of STW implementation funds, with awards based on readiness demonstrated by local partnerships. Ahead of the State's original estimate, all have successfully applied for implementation funding.

Local Partnership Councils (LPCs) -- composed of representatives from business, labor, education, community-based organizations, parents, and students -- guide regional and local STW initiatives. The State's 22 LPCs help integrate the activities of 178 school districts, six Kentucky Tech regions, eight Department of Education Service Regions, 13 Labor-Management Committees, 11 Service Delivery Areas, and a variety of other service structures and boards. Kentucky requires a significant match from these LPCs. Each partnership must provide 25 percent of funds in the first year, 50 percent in the second, and 75 percent in the third. Each partnership's funding proposal also must explain how activities will be sustained after the phase-out of Federal funds.

THE ELEMENT IN ACTION: ***Roll-out Strategies***

Utah is rolling out its School-to-Career (STC) funds via nine designated STC Regions, which deliver services through education, job services, human services, JTPA and vocational rehabilitation linkages. These regions also provide technical assistance to 101 education clusters comprised of a high school and its middle and elementary feeder schools. The majority of the regional partnerships include representatives of two existing structures: Local Coordinating Councils, composed of Private Industry Councils and local workforce development staff, and Applied Technology Boards, composed of local school superintendents and other educators. All regions received State development funds to develop implementation strategies, and all are responsible for rolling out funds to achieve statewide STW coverage during the five-year period. In the first implementation year, all regions are responsible for rolling out dollars to two educational clusters per region (15 percent of all clusters), one urban and one rural, to serve as model sites for the State. An additional 35 percent will receive funding in the second year; 25 percent in the third year; 15 percent in the fourth year; and 10 percent in the final year.

8. *All partners are responsible for ensuring that their systems yield results, which are measurable and drive continuous improvement efforts.*

All partners are individually and jointly accountable for the success of the system. But accountability assumes a new meaning, because attempting to assess a system's impact in conventional terms, like dollars spent per student, will not present a good measure of success.

This is another case where the Federal team and the implementing States and communities have had to redefine familiar terms due to the Act's systemic rather than programmatic intent.

Traditionally, *programs* have quantified success -- for example, in terms of the number of students served -- while recognizing that there are also qualitative dimensions of success. However, a ***system*** -- and especially such a multi-pronged and long-horizon initiative as STW -- must measure success qualitatively. Is academic performance improving, and are students successfully developing job skills? How well are students progressing through the system? How enthusiastically are they participating, and what are they choosing from the menu of options that the system provides? What leverage for system-building does a Federal venture capital investment generate in the form of State and local dollars? To what extent have the goals of linkage with other State programs been achieved? What is the level of involvement by employers and schools? How much support and participation has there been by higher education? What is the labor market experience of graduates?

These issues are challenging the NSTWO and the STW grantees to identify elements that meet the need for national information, while putting standards and measurement tools in place that add value to State and local improvement efforts over the long term. Many implementation State partnerships believe that the extent to which they can align Statewide priorities, set sensible priority-based goals, identify how best to measure progress toward these goals, and systematically improve systems based on these measures will profoundly affect how STW is established as a self-sustaining, national movement.

THE ELEMENT IN ACTION: ***Goals, Measurement and Accountability***

Examples which fully illustrate this element will take time to develop, although it is best illustrated now by showing the ways some States are causing system goals, evaluation, and funds to converge at the State and local level. In **Massachusetts**, 12 benchmark topics were established as the foundation of State and local system-building and progress measurement. These benchmarks were developed by a task force of Directors of 9 of the State's 16 Regional Employment Boards (REBs), Massachusetts' vehicles for managing sub-state roll out, and the State's technical assistance network. Every REB selects, from among the 12, those benchmarks which are applicable to its area, and incorporate these into work plans negotiated with each local school-to-work partnership in that region. The State also has contracted with an external evaluator to assist with evaluations of the STW system to measure progress and refine local systems and the overall State effort. The evaluator is developing a computerized data collection tool that covers Federal and State reporting requirements, to reduce local partnerships' reporting burden.

In the first round of implementation funding to local partnerships, the Massachusetts School-to-Work Office utilized a "Unified Request for Proposals" which provided a range of partnerships and providers with consolidated access to discretionary funds from STW, job training, workplace education and adult literacy, and employment service funds. The competitive process awarded extra points to applicants who could align STW and related funding streams. Quarterly reports by local partnerships include activities and progress toward objectives, and the various funding sources which were integrated to support STW. These show how the State is beginning the long-term process of aligning priorities, measures, and funding for continuous improvement.

A SCHOOL-TO-WORK STUDENT GRADUATES

"I am truly grateful for the ProTech program because it has given me an opportunity to begin a successful career," Marsha Dennis reflected.

Marsha Dennis was in the first graduating class of Boston's ProTech. After completing the health-care program at English High School, where she graduated with honors, she attended Bunker Hill Community College and received a surgical technician certificate. She works at Brigham and Women's Hospital, and plans to pursue a degree in nursing.

Before entering ProTech, Marsha was an average student with an interest in health care. However, she recalled: "It seemed impossible to get into it. I didn't know how." Her 10th grade science teacher told her about ProTech, and she entered the program the following year.

ProTech was challenging and rewarding for Marsha. "The standards were higher for us," she explained. "We had to be in school 95 percent of the time and keep an A/B average. The teachers told us from day one that it was a tough program. And I really admire how they told us."

At ProTech, Marsha participated in clinical rotations at Massachusetts Eye and Ear Hospital, Boston City Hospital, and Deaconess Hospital. Her science teacher went with the students to the hospital so that he could apply what they were learning at work in the classroom. For example, the students learned about bacteria in the classroom at the same time they were being asked to identify types of bacteria in the lab at work. Marsha said that applied learning made class interesting and made her more motivated to learn. "Everything we do in life is related to science!" she said. In her junior and senior years, Marsha worked at Deaconess Hospital as an administrative assistant in the surgery department, and as a medical librarian assistant.

"We were treated like we were regular workers," she said. "We had to solve the problems, and we had to find the answers." Marsha said that her workplace experiences made it easier to learn: "It was easier because I was not only studying it, but I was getting to see it in real life." She found her ProTech mentor to be a valuable resource as she worked to develop and apply the knowledge and skills of a health care professional. "She was always there for me," Marsha remembered. "She went over what I had learned and made sure I understood. She told me not to wait until the last minute. The fact that someone was willing to help was reassuring." Marsha's parents "did not think people would be so willing to help their child," she said. "My parents thought that they must like me a lot." The adults at ProTech also served as a network to help Marsha move from school into her career. "All the ProTech coordinators knew each other," she said. Through those contacts Marsha was able to learn about the opening for her current job at Brigham and Women's Hospital and arrange for an interview. She believes that ProTech gave her an opportunity for success and inspired her to strive to achieve that success.

“It was like somebody put a hand out and said, `Grab my hand. I’ll pull you up,’” Marsha said. “But it’s also a matter of you reaching out and grabbing it.”

CONCLUSION

The reasons that led to the passage of the School-to-Work Opportunities Act are, and will remain, as strong today as they were in 1994. The economy will continue to change dramatically, and the goals of education reform will continue to be refined. As this report has indicated, if Americans are to be well-educated and well-prepared for the society and jobs of the 21st century, it is essential to improve our people's knowledge and skills, and link learning with work and the other responsibilities and opportunities of life.

Research and communication with grantees and other stakeholders indicate that we need to do more to involve employers and all students, define career majors, and build bridges to post-secondary education. More students, parents, employers, and their communities still need to see that genuine learning is occurring in STW systems and that STW brings "real world" relevance to the K-12 school years. Employers themselves must demand school-to-work systems.

School-to-work will not succeed overnight. It will take time to recognize that STW helps young people to be better prepared to make the most of their abilities, interests, and opportunities in higher education, jobs and careers. Building STW systems and realizing the many benefits for students, employers, and society also will take time, as will making it available to school dropouts and youth with special needs.

However, the evidence on early implementation of STW systems is encouraging. Its principles and goals resonate with employers, students and educators, and are beginning to be accepted and bear fruit. Stakeholders are coming together to form viable and vital partnerships. The kinds of self-sustaining systems envisioned in the Act are emerging. The curtain is being raised on a new approach to both education and workforce preparation.

As STW principles take hold, stakeholders will expand local linkages, and as technical assistance brings staff up to speed in the classroom and workplace, the impact of new STW activities will increase. When properly connected, new system elements will not simply add to, but magnify the impact and extend the reach of those already in place. But it is imperative to improve and deepen the connections and collaboration between the worlds of school and work.

Notable progress has been made at all levels of education -- not only in high schools, but from lower schools to community colleges and four-year colleges. It is also evident among all stakeholders -- students and parents, employers and educators, and in a majority of States. Areas of noteworthy progress include:

State Organizational/Leadership Vision. States have made significant progress in creating their visions of STW systems, as well as dynamic leadership and organizational structures to manage the systems. Leadership generally comes from the Governor, Lieutenant Governor, or Superintendent of Public Instruction, who appoints an executive council that sets policy.

Strong State leadership usually results in active statewide partnerships that include key State agency representatives and committed business, industry, and labor leaders. Interagency teams collaboratively manage the system's daily operations, with one agency acting as the fiscal agent and housing a STW office. Collaborative partnerships that clearly identify the roles and responsibilities of each partner appear to be making the most progress.

Local Partnerships. Local partnerships are growing. Significant strides have been made in creating partnerships that cover all, or much, of a State. Increased understanding of STW by local partnerships is evident from the progress measure surveys. They show that employers gradually are increasing the number of work-based learning opportunities; schools are offering curriculum that integrates academic and occupational learning, and students are attracted to the STW experience.

Exemplary Practices. Nearly all States have exemplary practices within their systems that provide quality STW experiences for some students. These can serve as catalysts within the State, as well as models for local partnerships. The National School-to-Work Learning and Information Center collects information on these to inform system-development efforts.

School-to-work is on the road to success, and gaining momentum. Although STW systems continue to gather speed, they are still in their early development. The experience thus far indicates that more must be done to involve employers and all students, define career majors, and build bridges to post-secondary education. More students, parents, employers, and their communities still need to see that genuine learning is occurring in STW systems and that STW brings real world relevance to the K-12 school years. It also will take time to recognize that school-to-work helps young people to be better prepared to make the most of their abilities, interests, and opportunities in higher education, jobs and careers. Employers need to take an active voice in demanding school-to-work systems, and the connections and collaboration between the worlds of school and work need to be improved and expanded.

Now, it is necessary to sustain the momentum and keep on the course charted during the past two years. The power to move ahead will be generated as the full school-to-work system is built. It will run on the energy supplied by States and localities, and grow as ever more teachers, parents, employers, unions, and workers see the benefits of STW. Above all, the success of STW depends on strong support from all partners and the students who participate in it. It is their future that continually is being refashioned, and they are the ones who must acquire the knowledge and competencies to meet those changes. They have the most to gain. Ultimately, their future -- and the future of our country -- is at stake.

Copies of this report, as well as other studies and documents mentioned, are available from the National School-to-Work Office.